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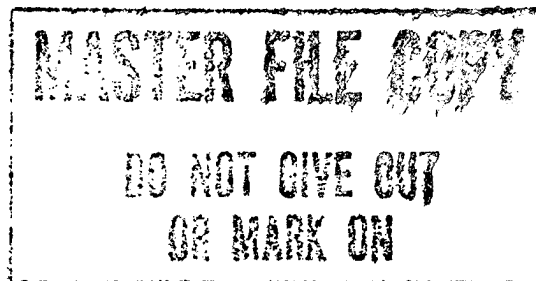
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Argentina: Defense Industries in Transition

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A Research Paper



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ALA 85-10085
August 1985

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Argentina: Defense Industries in Transition

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A Research Paper

This paper was prepared by [redacted]
Office of African and Latin American Analysis. It
was coordinated with the Directorate of
Operations. [redacted]

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Comments and queries are welcome and may be
directed to the Chief, South America Division, ALA,

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August 1985*

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**Argentina: Defense Industries
in Transition**

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Key Judgments

*Information available
as of 7 August 1985
was used in this report.*

President Alfonsin's civilian government came to power in December 1983, prepared to face the country's economic crisis, and determined to rein in military spending as part of its austerity program. In addition to sharply cutting the defense budget, Alfonsin's government has reordered the priorities of the military industries, subordinating the requirements of Argentina's armed forces to the need for an increase in revenue-generating exports. The government has pushed efforts to restructure the industries into more efficient and tightly managed units, manufacture new and more exportable products through coproduction programs, and improve foreign marketing techniques.

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In pushing these changes, the new regime has been trying to adjust for the excesses of the past. The military regimes that governed the country for most of the period between 1966 and 1983, for example, attached high priority to the development of defense industries and afforded them virtually unlimited funding. As a result, by the early 1980s, Argentina's arms industries had become second in output only to Brazil's in Latin America. They now produce a wide range of military equipment, including ground force materiel, naval weaponry, and aircraft, and are developing ballistic missiles and nuclear-powered submarines. At the same time, however, the protection from foreign competition that military regimes afforded the defense industries led to widespread inefficiencies, which, along with the uneconomically short production runs, resulted in costly weapon systems. Heavy government expenditures in equipping the military and in modernizing the defense industries played a part in bringing on the economic crisis now facing the country.

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The Argentines' reaction to Alfonsin's efforts to reorganize and reorient the defense industries have been mixed. The armed forces are resentful of the government's attempts to dilute military control over the industries, and they have voiced their opposition by categorizing the reduced budget as a threat to national security. The President's own party supports the program and views the potential revenue from increased exports as a partial solution to the country's financial crisis. The Peronists and Peronist-led labor are opposed to some aspects of Alfonsin's plan, particularly the rise in unemployment they believe will result from reduced government investment in the industries. The private sector is generally supportive, believing that Alfonsin's policies will generate exports and an influx of new technology. In our view, the critics are too divided and weak at this point to challenge the President's plan.

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Argentina will face severe difficulties as it tries to enter an international arms market already glutted with weapon systems designed to attract Third World buyers. Other producers, such as Brazil, have more established reputations and less expensive products. In addition, the Western technology on which the Argentine arms industry heavily depends is often accompanied by restrictions on exports to other countries. Finally, some officials in Buenos Aires oppose arms sales to such financially sound but politically controversial buyers as Iran, Iraq, and Libya. [redacted]

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Argentina's pressing need for new sources of revenue is likely to lead to intensified efforts to find foreign buyers, however, and may well override resistance within the government to major military sales that have been under discussion with Iraq and Iran. US efforts to halt such sales would probably be countered by Argentine requests for help in closing comparable deals with more acceptable buyers. [redacted]

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The Argentines are likely to continue to look primarily to European—especially West German—companies for technology. Although the United States has not been a major partner to date, Argentina may, in its drive to produce more exportable weapons, also begin turning to US firms for joint and licensed production arrangements. It may even begin to link such support to its repayment of its debt to US lenders. [redacted]

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Soviet offers of military equipment have so far met with resistance from Alfonsin's government as well as the military, in large measure because of Argentina's longstanding suspicions of Soviet motives. While we do not expect such attitudes to change, Buenos Aires may point to Moscow's offers in an attempt to put pressure on the United States to release technology and support export sales efforts. [redacted]

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Argentina: Defense Industries in Transition

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Introduction

Argentina's Government-owned and private arms industries expanded dramatically during the 1970s while the country was under military rule. After coming to power in December 1983, President Alfonsín's new civilian administration, faced with a broad economic and fiscal crisis, quickly moved to slash almost all categories of military spending, including expenditures for developing the military industries and purchasing their products. The government also decided to refocus the industries' emphasis toward production for export rather than for the Argentine armed forces. This paper examines the evolution of these industries and the impact of the return to civilian rule. It also assesses prospects for the effort to expand military exports and discusses implications for the United States.

foreign experts subsequently established plants to make Browning pistols, Colt machineguns, and Bofors field guns.

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In the 1940s, the Argentine military established an official body, the Bureau of Military Factories (DGFM), to oversee and coordinate the country's arms industries. A military research organization of scientists and engineers, the Armed Forces Scientific and Technical Research Center (CITEFA), was set up to assist DGFM. Military control gradually expanded as the government nationalized various arms-producing enterprises and placed them under the supervision of senior military officers.

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During the 1950s and 1960s, all three of the armed services deepened their involvement in military-industrial production. With the assistance of West German technicians, factories run by the Air Force began to design and manufacture aircraft. Navy shipyards built patrol craft and frigates, and industries controlled by the Army produced various types of heavy artillery, machineguns, and other materiel.

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Evolution of Argentine Weapons Production

Argentina has a long tradition of weapons production, and the level of development of its arms industries is impressive by Latin American standards. Today the country is one of the few in the Third World that manufactures weapons in every major category, including armored vehicles, ships, aircraft, and missiles. Its arms production levels are second only to Brazil's in Latin America.

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Origins of Arms Industries

Argentina was the first Latin American country to embark on the manufacture of its own military weapons, according to military historians. Small-arms factories were established as early as 1817. In 1911, German arms specialists helped set up a factory in Argentina for the production of Mauser rifles. Other

The Late 1960s and Early 1970s: "Plan Europa"

The next phase in the development of Argentina's weapons-manufacturing capabilities began in 1967 when a new military government publicly launched "Plan Europa." This plan had two goals: to reduce Argentine dependence on US arms, temporarily embargoed by Washington after the 1966 coup, and—over the longer run—to make the country self-sufficient in military production. The plan envisioned coproduction of arms with West European firms—hence the name—and was designed also to secure systems that could not be produced domestically. According to public statements at the time, the

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***Brazil's Arms Industry:
Latin American Success Story***

The Brazilian arms industry is the most successful in Latin America. Brazil began exporting weapons in 1975. By the early 1980s, it was among the world's 10 leading arms-exporting nations in volume of trade.

Brazil's weapons industry has placed heavy emphasis on export sales. According to trade journals, 95 percent of all arms produced in Brazil are slated for export. Foreign customer requirements are considered before those of the Brazilian forces. In many cases, a Brazilian weapons system is on the international market for several years before it is made available to the domestic forces.

According to US Embassy and defense attache reporting, Brazilian Government and arms industry officials realized early in the industry's development that the country's domestic military requirements were not large enough to allow cost-efficient production runs. This awareness led them to consider the marketability of each weapons system before production began. Preproduction consideration of customer needs helped Brazil avoid manufacturing arms that could not be successfully exported.

The larger production runs resulting from an emphasis on exports have held down unit costs, a primary concern of Third World customers. Most weapon systems, moreover, are offered in basic configurations, but with a wide range of options, making it possible to tailor the price tag to the buyer.

In addition, Brazil's comparatively simple designs are geared to the needs of low-technology countries. Brazilian weapon systems can withstand extreme climates and harsh terrains. Maintenance time and maintenance costs are low.

The growth of Brazil's arms industry was nurtured and orchestrated by the military governments that ruled the country until March 1985. Federal agencies were instrumental in seeking out Western firms to build factories or to license the production of arms in Brazil. The agencies also assisted and coordinated negotiations for foreign sales. The government appears to be continuing to perform these functions under civilian rule.

government also expected these programs to bring other important benefits as well: training for industry personnel, an influx of foreign capital, and the enhancement of Argentine prestige and influence in the Third World.

During the first few years of Plan Europa, Argentina launched programs for the coproduction of relatively low-technology items that would provide the training and experience needed by industry personnel. It began local assembly of French AMX-13 light tanks, Swiss Mowag armored personnel carriers, and Italian 105-mm howitzers. According to defense industry journals, the coproduction agreements typically called for a prototype to be built by the foreign licensing company in its own factories, with the remainder of the series manufactured in Argentina under the technical supervision of the licensor. The agreements

usually provided for training of Argentine personnel and progressive integration of Argentine-produced components into the product.

As they entered the 1970s, the Argentines focused on expanding their technical capabilities through the training of research and production personnel. The military government initiated a large-scale program to develop a pool of engineers, designers, managers, and skilled workers. Trade journals indicate that this program was successful in providing the defense industries with a technically sophisticated work force.

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Modernization in the Late 1970s and Early 1980s

Buenos Aires responded to the US embargo in 1978 on human rights grounds, [redacted]

[redacted] by pressing West European firms for coproduction of more sophisticated weapon systems. In the late 1970s, it signed major coproduction agreements with West German and other companies for a range of relatively advanced weapon systems, including the TR-1700 submarine, the IA-63 jet trainer, and the Argentine Medium Tank (TAM) family of armored vehicles.² [redacted]

To move into production of more sophisticated weapons, Argentine officials had to upgrade the country's arms-manufacturing facilities. According to official budget statistics, the military government allotted the lion's share of the defense budget—then between 4 and 5 percent of the GNP—to help modernize the facilities of all three services. Argentine armed forces journals reported at the time that the Army purchased new machinery from West Germany for the assembly of TAM armored vehicles and 155-mm gun barrels. The Navy and a West German company built a major new shipyard—completed in 1982—for construction of TR-1700 diesel attack submarines. A comprehensive Air Force-run program for modernizing and upgrading military-aircraft-manufacturing facilities also was launched with assistance from West German firms; under this program, the Argentines built new hangars, acquired milling machines from West Germany, and introduced advanced technology for the manufacture of jet aircraft, such as the use of composite materials. [redacted]

By 1983 Argentina's arms-manufacturing facilities were producing an array of weaponry sufficient to meet most of the requirements of the Argentine military. Their products included armored vehicles, artillery, ships, submarines, missiles, and military aircraft. [redacted]

Changes Under Civilian Government

The elected government that came to power in December 1983 under Alfonsín has made major modifications in Argentina's arms industry programs. These

² See the appendix for more information on these and other weapon systems that are being produced or are under development in Argentina. [redacted]

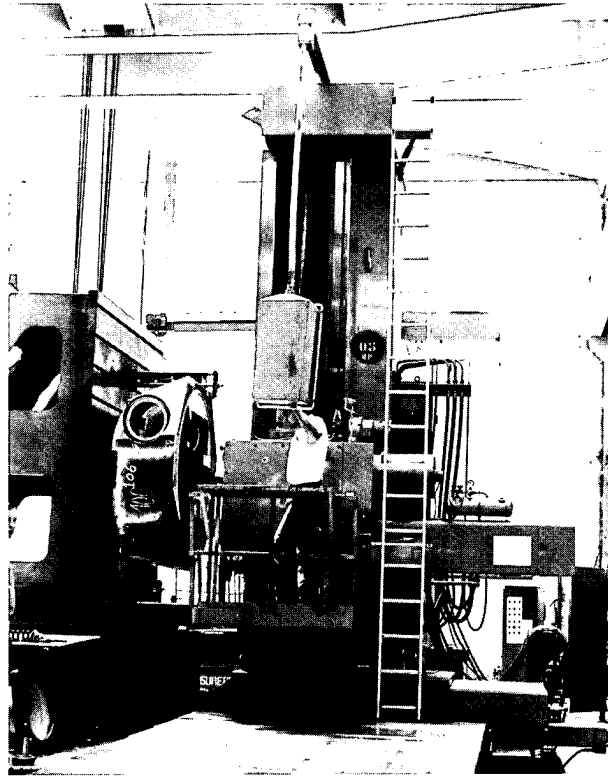


Figure 2. TAM Tank Production Line. Argentina began producing the TAM tank to meet domestic requirements and eventually hoped to recoup development costs through export sales. However, no sales have been concluded thus far. [redacted]

changes are part of an overall government austerity program in which reductions in defense spending are a feature.³ In addition to cutting back funding for a number of arms production programs, the civilian government is reorganizing the industries to improve coordination and efficiency, [redacted] and press reporting. It is also developing new strategies designed to increase revenue-generating weapons exports. [redacted]

Budget Cuts

Argentina's financial crisis has meant a sharp cutback in government spending, of which defense spending typically accounted for roughly 5 percent of GNP.

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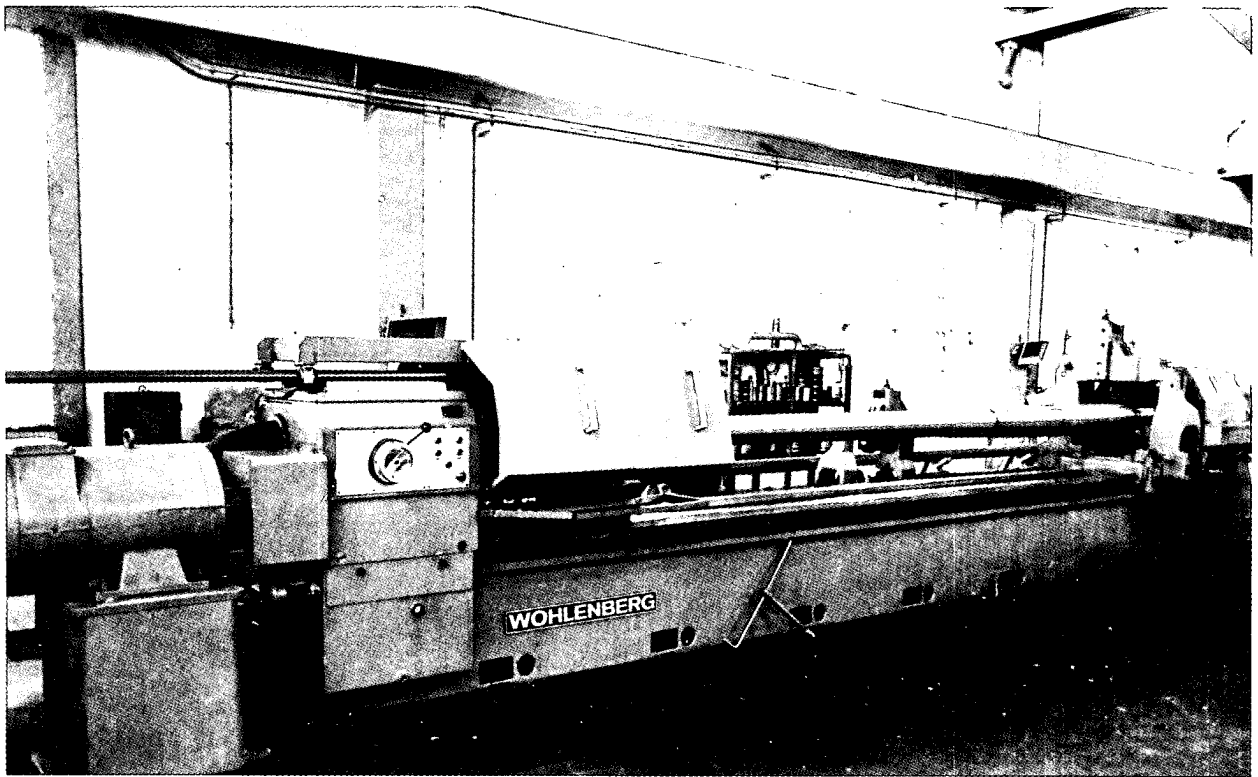


Figure 3. West German Milling Machinery for Gun Barrel Production. Initial production of a 105-mm gun in Argentina was dependent on French gun barrels. The purchase of this machinery eliminated this dependence.

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Figure 4. Garcia Domecq Shipyards in Buenos Aires. An aerial view of the shipyards, built with the assistance of a West German firm. In 1982, the first of four TR-1700 submarines to be built in Argentina was laid down at this facility.

Key:

1. A neighboring repair facility.
2. Synchro-lift used by both yards.
3. Electrical workshops and storage.
4. Berths for construction of two submarines.
5. Hull section welding shops.
6. Plate store.
7. Plate-cutting shop.
8. Administrative building.



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Figure 5. The Military Aircraft Factory (FMA) at Cordoba. FMA currently produces the IA-58 ground attack aircraft and recently rolled out the prototype for the IA-63 jet trainer.

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Funding for the arms industries was reduced along with other categories of military spending.

For example, development of new variants of the TAM armored vehicle has been halted. In addition, the government has cut funding for development of the IA-63 jet trainer by more than half. The Navy's submarine-manufacturing shipyard has also been hit hard; work on two TR-1700 submarines, originally scheduled for completion by 1986, is being delayed by at least three years because of funding cuts. In addition, labor dissatisfaction stemming from funding cuts has led to work stoppages in a number of arms production facilities and has complicated efforts to attract and retain needed personnel.

We believe these trends will continue as Alfonsin clamps down further on government spending under the tough new economic austerity program he introduced in June 1985. Although the 1985 defense budget has not yet been announced,

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Press reports indicate that Defense Ministry officials may be lobbying for a separate budget allocation for the defense industries in an attempt to insulate them from overall military budget cuts.

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Proposed Reorganization

While Argentina's economic crunch severely limits funds for the arms industries, the government is trying to compensate by improving the industries'

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efficiency. In our judgment, a fundamental weakness long plaguing these industries has been a lack of coordinated planning. [redacted]

[redacted] each service has managed the industries that produce weapon systems, meeting its own requirements with very little interservice coordination. The industries have paid a high cost for this lack of cooperation. Design and production facilities run by the different services do not share technology obtained from foreign companies. [redacted]

[redacted] the services have turned to overseas suppliers for technology already available in Argentina. Moreover, each service has insisted on dealing separately with equipment suppliers, resulting in low-volume purchases with high price tags. [redacted]

The civilian administration intends to correct these organizational problems and thereby cut costs, according to the US Embassy. A civilian-military commission is studying Argentine arms production to recommend ways to streamline the industries and increase their cooperation. The government has proposed legislation—still pending—that would place the government-owned arms-manufacturing companies under a single holding company. The measure would also encourage expanded participation of the private sector by providing for subcontracting of portions of future coproduction programs to private Argentine companies—thus offering such firms opportunities to gain new sources of income and greater access to foreign technology. Another goal of this bill would be to provide for centralization within the Defense Ministry of decisionmaking regarding military weapons and equipment purchases. [redacted]

According to Argentine press reports, government officials are drafting a second bill that would force further industrywide cooperation by establishing a central clearinghouse for acquisitions of advanced technology from foreign suppliers. This legislation would ensure that all arms production facilities are afforded access to any technology Argentina obtains. Although we lack details on this bill, we believe it probably covers both government and private facilities since one of the government's goals is to encourage integration of the two sectors. [redacted]

The Alfonsin government also appears to be attempting to dilute the military's control over arms production by shifting overall supervision of the defense-industrial structure from the military services to the

Organization of the Military Industries

Argentina's arms industries have long been dominated by the military. Under the military governments that ruled the country for most of the last two decades, the services ran some 80 percent of the industry. Private-sector involvement was largely limited to the support industries. [redacted]

The Army's production entity, known as Military Factories (FM), manufactures ground force equipment and coordinates the work of some 31 government-owned, private, and mixed public-private companies that also produce such equipment. These companies' products include not only finished military goods, but also basic materials such as minerals, steel, chemicals, and a variety of heavy industrial and consumer goods. [redacted]

The Army-run research organization—the Armed Forces Scientific and Technical Research Center (CITEFA)—manages the development of new weapons for all branches of the armed forces. The Center's engineers and scientists work in a broad range of basic and applied research areas related to defense production. These include solid-state physics, lasers, and missile development. CITEFA personnel also study communications systems, radars, and computers. [redacted]

Most military aircraft production takes place at the government-owned Military Aircraft Factory (FMA) in Cordoba. Aircraft design is carried out at the Institute of Aeronautic and Space Research (IAE), attached to FMA. The Institute also designs and produces military and sounding rockets. [redacted]

The Navy-run State Naval Shipyard and Naval Factory (AFNE) is Argentina's largest shipyard. It has built a series of West German-designed frigates under license. This shipyard also produces merchant marine and fishing vessels, as well as other military equipment, components, and heavy industrial products. The second-largest shipyard is the three-year-old Garcia Domecq yard—owned by the Navy (75 percent) and a West German firm (25 percent) and devoted solely to the manufacture of submarines. [redacted]

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Table 2
Argentina: Key Imported Components
of Major Weapon Systems

Component	Supplier
TAM medium tank ^a	
Armor plate	West Germany
Engine	West Germany
Transmission	West Germany
Tracks	West Germany
Turret rings	West Germany
IA-58 Pucara light attack aircraft	
Engine	France
Engine	United States
IA-63 Pampa jet trainer	
Landing gear	Israel ^b
Wet wings	West Germany ^b

[redacted] is currently working on the development of an all-Argentine TAM.

^b The first landing gear for the IA-63 was made in Israel, but this gear will be made in Argentina in the future. The wet wings for the first four IA-63s were supplied by West Germany, but all future wings are to be made in Argentina by FMA.

[redacted]

civilian-run Defense Ministry. The Under Secretary of Defense for Production has been designated to oversee all arms research and production organizations, according to recent press reports. [redacted]

Changes in Export Strategy

The third element in the government's strategy for improving the arms industries despite necessary budget cuts is to focus on production for export. Argentina has been seeking foreign customers for its military products since the late 1960s, but US Embassy and defense attache reporting indicates that overseas sales have been minimal to date for a variety of reasons, including:

- High unit production costs and consequent high export prices.
- Argentina's difficulty in offering attractive credit terms because of its financial difficulties.
- Export restrictions set by governments of coproducing countries.

Foreign Sales Authorization

Prospective foreign military sales are reviewed on a case-by-case basis at various levels of the Argentine Government, according to US Embassy and press reporting. Initial authorization is usually made by the director of the branch of the arms industry that is seeking to generate the sale. For example, the director of Military Factories (FM) must approve all exports of ground forces materiel. [redacted]

The next level of approval is the Policy Coordinating Committee for Military Materiel Exports. This recently established, interministerial agency operates within the Ministry of Defense and is made up of under secretaries from the Ministries of Defense, Economics, and Foreign Relations. The Committee is charged with authorizing all export negotiations involving Argentine arms manufacturers in the public or the private sectors. [redacted]

The Ministers of Defense and Foreign Affairs recommend denial or approval of arms sales, but the final decision is made by the President. According to press reports, weapons exports that would require changes in existing government policies—such as sales to countries at war—must also be approved by the Congress. [redacted]

- Opposition by some Argentine officials—most recently, Foreign Minister Caputo—to arms sales to potentially lucrative markets in the Middle East, particularly Iran and Iraq. [redacted]

In addition, Argentine promotional efforts have long been weak. Production of the TAM tank, for example, was well under way before the Argentines began a sales campaign. In our view, defense industry officials have not attached high importance to such efforts, nor have they considered market research a prerequisite to production decisions. The US defense attache reports, moreover, that financial constraints forced

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Export Difficulties

The TAM tank program embodies many of the problems that have plagued Argentina's export efforts. The TAM, like other Argentine ground forces equipment, was developed for the national Army, and little if any consideration was initially given to its exportability. Although negotiations have been conducted with several Asian countries and Peru, no TAM export sales have been concluded,

and press reports. There are several underlying reasons for this, in our judgment:

- Because the Argentine Army needs no more than 200 TAMs, unit costs are high.*
- Bonn has placed export restrictions on all tanks using West German components. This has particularly impeded sales to controversial countries such as Iran.*
- The Third World market for light tanks is limited by reductions in defense spending.*
- The TAM has not been proved in battle.*
- There is stiff competition from newer and less expensive light tanks, from such traditional producers as France and Austria as well as a newer one, Brazil.*

is trying to circumvent West German export restrictions by producing an all-Argentine TAM. According to an Argentine officer, a prototype with a domestic engine has already been produced. We believe, however, that efforts to manufacture the tank with Argentine components will probably be unsuccessful because of technical and funding limitations.

Exports of other Argentine-made ground force materiel have also been disappointing.

Argentina has also had trouble finding foreign buyers for its aircraft. The only customer so far has been Uruguay, which has purchased six IA-58 light attack aircraft, Venezuela has canceled a contract it had signed for 24 IA-58s—probably, in our view, because the aircraft did not meet Venezuelan Air Force requirements. The Bolivian Air Force has expressed interest in buying IA-58s, but lacks funds; one option reported to be under consideration is a barter agreement involving Bolivian natural gas.

Iraq has signed a contract to purchase 20 IA-58s, but actual transfer of the aircraft is being delayed on both political and financial grounds.

the Argentines in recent years to forgo or severely limit participation in international aircraft shows, an important means of attracting buyers.

The Alfonsin government has begun to address some of these problems in an effort to increase exports and thus make the industries less dependent on government financing. According to trade journals the government is starting to press for coproduction and licensing agreements that would replace currently produced weapons with systems that are

more attractive to Third World customers, such as inexpensive armored vehicles and a small transport aircraft. Foreign companies would provide new capital to the industries for development and marketing, at least partially offsetting budget cuts. Ultimately, exports of the more marketable products would supply Argentina with funds that could be reinvested in arms production.

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Equipment for all three services—army, air, and naval—is part of the export drive, but the government appears to be implementing its new strategy first in the production of ground force equipment. [redacted]

[redacted] TAMSE, the TAM tank production firm, is preparing to deactivate one of its production lines and instead assemble Austrian-designed military vehicles under license, solely for export, probably to the Middle East or other countries in Latin America. [redacted]

The civilian administration has also been intensifying its efforts to find foreign buyers for Argentine military aircraft. Argentina's display at the 1985 Paris Air Show was its most extensive such exhibit in at least three years. [redacted]

In addition, the government-owned Military Aircraft Factory (FMA), Argentina's largest aircraft producer, has given exclusive marketing and distribution rights to a private Argentine company to push sales of military aircraft, such as the IA-63 jet trainer, to Third World governments in Latin America and the Middle East. [redacted]

The government has begun testing the waters for possible Argentine naval equipment deals as well. Trade journals report that discussions have been held with Iran, Libya, Egypt, and other countries regarding possible sales of TR-1700 submarines, and with several Asian countries concerning Meko 140 frigates. [redacted]

Domestic Attitudes Toward Change

Alfonsin's efforts to reorganize and reorient the defense industries have encountered a mixed reaction domestically. The armed forces, for the most part, resent the government's attempts to dilute military control over the defense industries. [redacted]

[redacted] and press reporting. In the past, with the military in control of these industries, many officers earned supplemental incomes through management positions and kickbacks, according to press reporting. Alfonsin has made it clear that these days

are over. Military leaders have publicly voiced opposition to his plans, but we believe they are too weak, divided, and discredited to challenge the President.⁴ [redacted]

Alfonsin's party supports his programs for restructuring the defense industries—particularly the emphasis on expansion of exports. According to US Embassy [redacted]

members of the ruling Radical party view the potential increase in export revenues as a necessary part of any real response to the country's financial crisis. The opposition Peronists and the Peronist-led organized labor movement, on the other hand, are opposed to some aspects of the program, according to press statements. These groups are concerned that reduced government spending on these industries will aggravate unemployment. The Peronists, moreover, historically have been strongly nationalistic and have favored development of an arms industry geared to fulfilling Argentine military needs so that the country would not have to depend on foreign suppliers. We believe, however, that the Peronists and their labor allies are internally divided, and that they have been unable to offer feasible alternatives to Alfonsin's approach. [redacted]

According to press reports, the business community is generally supportive of Alfonsin's policies toward the arms industries. The private sector sees potential benefits from the exports and new coproduction programs, as well as from the influx of advanced technology. [redacted]

Outlook

In our view, funding limitations will continue to plague the defense industries during the next few years, and export levels are likely to remain too low to stimulate needed modernization. Despite its efforts to improve exports, Argentina will face severe difficulties as it tries to enter an international market already

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Shrinking Third World Arms Market

A key factor that works against efforts by Argentina to increase its arms exports is the shrinking Third World market. In the 1970s, a growing number of countries—particularly in the oil-exporting Middle East—were willing and able to buy large quantities of weapons. This trend has been reversed in the 1980s for several reasons:

- *Decline in purchasing power. Many Third World countries are experiencing economic crises. Declining oil revenues and tighter credit have led to a period of austerity that is reducing Third World defense expenditures.*
- *Completion of modernization programs. Many Third World military expansion and modernization programs, begun in the 1970s, have been completed. Another wave of modernization efforts probably will not occur before the late 1990s.*
- *Upgrading of existing equipment. Funding shortages are forcing Third World buyers whenever possible to improve equipment they already possess, rather than purchase new weapon systems.*
- *Indigenous arms production. A growing number of countries are seeking to produce and export their own weapons instead of purchasing foreign-made equipment. A dozen South American, European, and Asian countries have entered the international arms sales business during the past decade, according to open-source reporting.* [redacted]

glutted with weapon systems specifically designed to attract Third World buyers:

- The West Europeans are often favored in purchases by former colonies.
- The USSR and the East European countries, with attractive credit terms and inexpensive weapons, command a large share of the Third World market.
- Other LDC producers, such as Brazil, have more established reputations and offer less expensive products than Argentina. [redacted]

In addition, our projections for Third World weapons procurement are at their lowest point in a decade, largely because of defense budget cuts resulting from the worldwide financial crisis.⁵ Moreover, potential major buyers that are politically controversial—Iran, Iraq, and Libya—may well remain unacceptable as customers, in the eyes of the Argentine Foreign Ministry, despite pressures from supporters of such sales. Argentina's dependence on Western technology, with its accompanying export restrictions, will further limit available markets. [redacted]

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We believe, however, that, despite financial and marketing constraints, Alfonsín will try to encourage arms production in Argentina for several reasons:

- The defense industries employ a large number of Argentines. FMA, for example, is the largest employer in Cordoba Province, with more than 5,000 people on its rolls.
- The military industries are used to attract and develop hard-to-replace technical personnel that Argentina needs to retain for its longer term economic development.
- All Argentine political factions agree that Argentina needs an independent military production capability, a particularly sensitive issue because of the experience with the British and US embargoes during the Falklands conflict.

Given these pressures, we believe that the Argentine Government will at least provide enough financing to keep the industries producing at some politically acceptable level. [redacted]

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Notwithstanding Argentine nationalism, the glutted market and the need to produce for export will force the Argentines to look increasingly toward cooperative efforts with foreign producers as a way to carve out a corner of the world market. We believe, therefore, that, although Argentina will continue to produce a wide range of relatively low-technology items, it will increase its dependence on Western suppliers for high-technology components. [redacted]

Implications for the United States

As budget cuts continue, we expect increased domestic pressure on the Alfonsin government to approve exports to politically sensitive countries such as Iran, Iraq, and Libya. In public statements, Alfonsin has opposed these sales, but pressure is likely from several sectors: the military, which stands to gain from a healthier arms industry; the industries themselves, which would receive a portion of the revenues for profits and reinvestment; and nationalist political groups such as the Peronist party, which have long championed the domestic arms industries. US diplomatic efforts to halt such sales would probably be countered with Argentine requests for help in closing similar deals with more acceptable buyers. [redacted]

Over the long term, Argentina is likely to continue looking primarily to Western nations for the technology it needs to meet its production goals. Although the United States has not been a major supplier to date, Argentina may, in its drive for export success and its quest for the more advanced technologies needed to compete in the international arms market, turn increasingly to US firms for joint and licensed production agreements and marketing assistance. In our view, if the United States is unresponsive, the Argentine Government may begin to link the need for such US support to its repayment of its foreign debt. [redacted]

In addition, as pressures to export quality military equipment grow, Buenos Aires may cite Soviet offers of hardware and technology as an alternative to US assistance. To date, these offers have been limited to

finished military aircraft, which alone would not assist the Argentine defense industries. Acceptance by Argentina of this type of offer could, however, provide the Soviets with an entree leading to further military assistance, including arms production technology—an angle Moscow might be willing to play with. While Soviet proposals have so far met with resistance from Alfonsin's government as well as the military, harsher economic conditions may soften their concerns. Even if Alfonsin continues to keep the door closed to the Soviets, Buenos Aires may still point to Moscow's offers in an attempt to put pressure on Washington to release technology and support export sales efforts. [redacted]

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Appendix

Major Weapon Systems

Argentina produces armored vehicles, artillery, small arms, ships, submarines, rockets and missiles, and military aircraft. Some of the weapons have been indigenously designed and are produced entirely in Argentina, but the majority are heavily dependent on foreign engineering, parts, and assembly technology, [redacted] and Embassy reporting.

Current Systems

Ground Force Equipment

Armored Vehicles. Argentina's armored vehicle production capability was developed through a series of agreements with West European firms during the 1970s. The most significant contract was signed with the Thyssen Henschel company of West Germany. This accord provided for the design, development, and construction of prototypes for the Argentine Medium Tank (TAM), and for a family of related armored vehicles. [redacted]

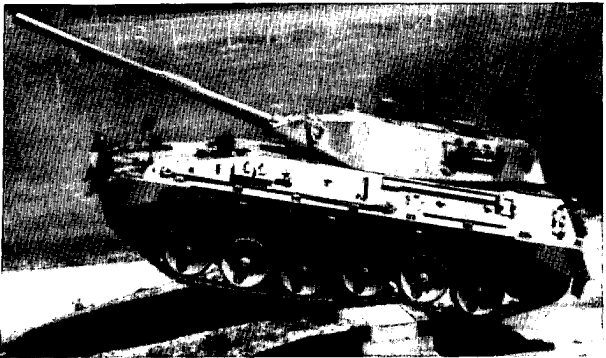
The West German firm completed the first TAM prototype in 1976, and production began in Argentina three years later. TAMSE, a government-owned Argentine company, assembles the tank. The chassis and 105-mm gun turret are made in Argentina, but the engine, transmission, and fire-control system are provided by Thyssen Henschel, according to military journals. Argentina has sent several TAM chassis to a firm in Italy for modification into self-propelled artillery by installation of 155-mm guns, but [redacted] the Italian company is refusing to release the completed vehicles because of a dispute over payment. [redacted]

The TAM "family" includes three other armored vehicle programs based on the original Thyssen design, [redacted] and industry publications:

- The VCTP, an armored personnel carrier, carries a 20-mm cannon and a 7.62-mm machinegun. The Argentine Army now has 150 VCTPs in service and

Figure 6

The TAM Medium Tank



Crew	Four (Commander, gunner, loader, and driver)
Armor	Conventional
Combat weight	30 tons
Manufacturer	TAMSE
Armament	
Main	105-mm main gun
Coaxial	One 7.62-mm machine gun
Antiaircraft	One 7.62-mm machine gun
Ammunition	
Type	HEAT, APDS, HESH, and APFSDS
Capacity	50 rounds of 105 mm
Fire-control system	Electro-optical devices for night vision and firing, stabilized panoramic sight, and ballistic computer
Maximum road speed	64 km/hr
Maximum range	550 km
Power-to-weight ratio	21 hp/hr
Engine	West German-built 720-hp, six-cylinder, water-cooled diesel engine, or Argentine-built Fiat engine
Transmission	West German built
Estimated cost	\$1.8 million

Note: The TAM tank was developed for Argentina by a West German firm. Several armored vehicle variants were based on its original design.

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has ordered 150 more, although budgetary problems may prevent acquisition of the additional vehicles.

- A limited number of VCTMs, mortar-carrying versions of the VCTP, have also been delivered to the Army.
- The Army's umbrella production entity, Military Factories (FM), has produced a prototype for a tank recovery vehicle based on the TAM, but it has not been completed because of a lack of funds to purchase a recovery crane from West Germany.

[redacted]

[redacted] has obtained a license from a Dutch firm to produce night vision devices for use on the TAM and its variants.

Machinery is in place at the San Martin facility of FM, but budget constraints are delaying the start of series production. [redacted]

Press reports indicate that series production of an Israeli-Argentine multipurpose armored vehicle began in November 1984 and that 90 percent of the components are being made in Argentina. This four-wheel-drive vehicle can be used for troop transport and equipped with antitank rockets, antiaircraft cannons, and machineguns. Thus far, only Argentina's border guard force is scheduled to receive the vehicles. [redacted]

FM also produces armored vehicle components under license for West European firms. It manufactures components of the AMX-13 light tank and the AMX-VC1 tracked armored personnel carrier for a French

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Figure 8. Pampero Multiple Rocket Launcher.



Figure 9. Mathogo Wire-Guided Antitank Missile.

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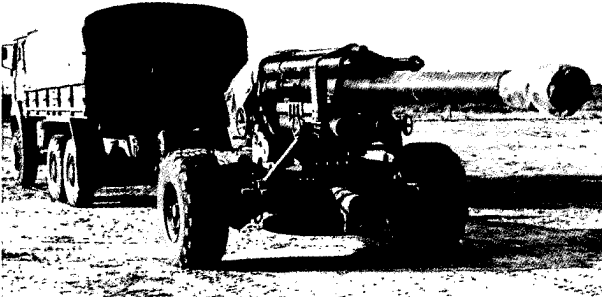


Figure 10. 155-mm Howitzer.

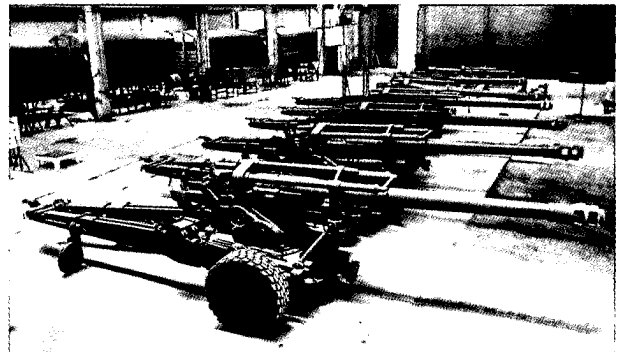


Figure 11. 155-mm Howitzer Assembly Line.

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company; assembly is completed in France. A Swiss firm has selected Argentina to produce components for its M-3 and M-16 APCs, [redacted] FM is also being considered by two Italian firms for joint production of an armored vehicle now under development. [redacted]

Rockets and Missiles. According to Argentine Army journals, the Armed Forces Scientific and Technical Research Center (CITEFA) has designed two major rocket systems for the Army: the Pampero multiple rocket launcher and a follow-on, the SAPBA-1:

- The Pampero, designed as a battlefield support system, is a 16-tube launcher with 105-mm rockets. The system can be mounted on either a trailer or a vehicle and has a range of 12 kilometers. It is now in series production.

- The SAPBA-1 system builds on the Pampero design, but has a 40-tube launcher with larger rockets and increased range. [redacted]

The Mathogo antitank missile, similar to West European designs of the 1950s, is manufactured by FM. An entirely Argentine product, the Mathogo is wire guided, operable by one person, and has a range of 2 kilometers, according to promotional literature. It is available in an infantry or pack type and a helicopter-launched version. [redacted]

Artillery. In our view, Argentina's interest in producing totally indigenous weapons is evident in its artillery programs. FM has begun manufacturing a 155-mm howitzer that uses only Argentine components,

[redacted] Ammunition for this weapon is made in Argentina under French license. [redacted]

In addition, FM is involved in two coproduction programs involving artillery systems. Together with a French firm, FM produces 105-mm towed artillery pieces, mortars, and shells. It also produces anti-aircraft artillery weapons in cooperation with a Swiss firm, Oerlikon-Burhle. FM and Oerlikon-Burhle are discussing a possible expansion of their agreement to encompass licensed production of 20-mm and 40-mm anti-aircraft weapons. [redacted]

Naval Systems

Submarines. The Argentine Navy signed a contract in 1977 with the West German firm Thyssen Nordseewerke for the construction of six TR-1700 attack submarines. Two of the submarines were subsequently built at Thyssen's shipyards in West Germany. One was delivered to the Argentine Navy in 1984, and the other is completing sea trials in West Germany. Construction of the remaining four began in 1983 at the Garcia Domecq shipyards. Hulls have been laid for three of these submarines. The first of the three vessels was originally scheduled for completion this year, but funding cutbacks and technical difficulties are causing major delays. [redacted]

Corvettes. In 1980, the West German firm Blohm and Voss contracted to assist the Argentine Navy in building six Meko 140 corvettes at the AFNE shipyards. Four of the six have been delivered to the Navy thus far. *Jane's Fighting Ships* indicates that the Meko 140s carry Exocet missile launchers and have an ASW capability. [redacted]

Naval Missiles. According to industry publications, Argentina currently produces the Kingfisher air-to-surface missile intended for antiship missions, in two versions. The ASM-1 has a range of 9 kilometers, while the follow-on version, the ASM-2, has a 15-kilometer range. Both carry 40-kilogram high-explosive warheads. [redacted]

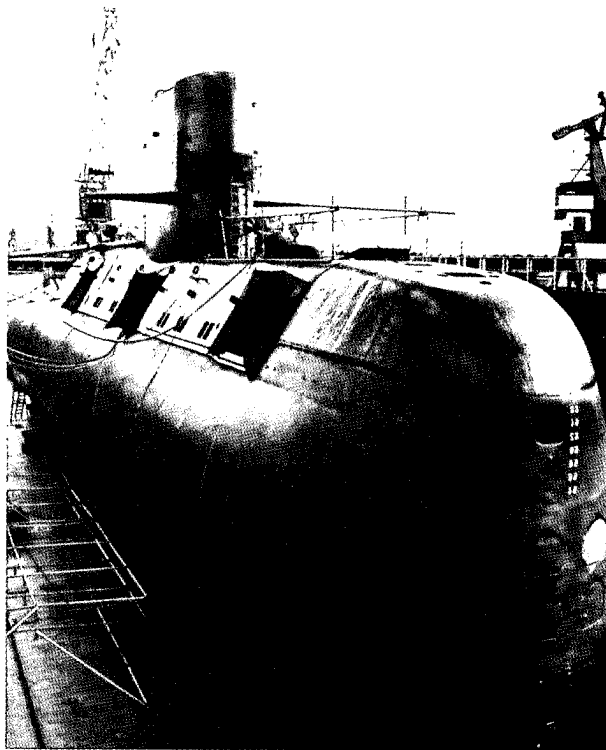


Figure 12. TR-1700 Submarine. This is the first TR-1700 submarine at the manufacturer's shipyard in West Germany. Four additional TR-1700s are to be built at Argentine shipyards. [redacted]

Aircraft

IA-58. The Argentine-designed IA-58 Pucara, a twin turboprop light attack aircraft, is the only aircraft in series production at the government-owned Military Aircraft Factory (FMA), [redacted]. The initial two-seat version, powered by French Astazou engines, was developed in the late 1970s primarily for use by the Argentine Air Force, which now has some 54 of these aircraft in its inventory. [redacted]

During the past few years, FMA has developed several follow-on versions to the IA-58, primarily to overcome speed and range limitations exposed during the Falklands war in 1982. One of these, designated the IA-66, uses the more powerful US-made Garret

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Figure 13. The IA-58 Pucara Ground Attack Aircraft. The IA-58 is in production at FMA's Cordoba facility.



engine. [redacted]
recent development of two single-seat IA-58 versions. In one, the Pucara's second seat has been removed to accommodate an additional fuel tank for increased range. In the other version, the aircraft's 20-mm cannon has been replaced with a 30-mm cannon.

IA-63. Under a joint cooperation agreement signed in 1980 with the Dornier company, FMA is to produce a ground attack jet trainer, the IA-63 Pampa, using technology from the West German firm, according to numerous press reports. The initial test flight was conducted in October 1984. Three prototypes are to be built for testing; US-built Garret engines for these aircraft have already been delivered. [redacted]

The IA-63 program has suffered a series of delays as a result of technical and funding problems. For example, the United Kingdom's continuing ban on military equipment sales to Argentina, stemming from the Falklands conflict, is blocking the acquisition of British-produced ejection seats used in the original design, according to trade journals. Negotiations are under way with US and French seat producers, but a change will require expensive and time-consuming modifications to the cockpit. [redacted]

Private Programs. Military aircraft are also produced at two private facilities in Argentina, with no government participation. Chincul, an Argentine subsidiary of the US Piper Company, has developed a trainer called the "Yellow Bird," based on the Piper Cherokee design. Press statements of company officials indicate, however, that production will begin only if prospective buyers can be found. [redacted]

RACA, a Hughes Company subsidiary in Argentina, manufactures the Hughes 500 helicopter under license. As of 1982, the company had produced approximately 40 military and 10 civilian helicopters. Export of the military version is subject to US approval. [redacted]

Systems Under Development

Despite cuts in funding, Argentina is continuing to develop a number of new products, [redacted] and trade publications. Some of these are indigenously designed. Others, high-technology items beyond Argentina's current level of expertise, are to be license-produced with Western firms. [redacted]

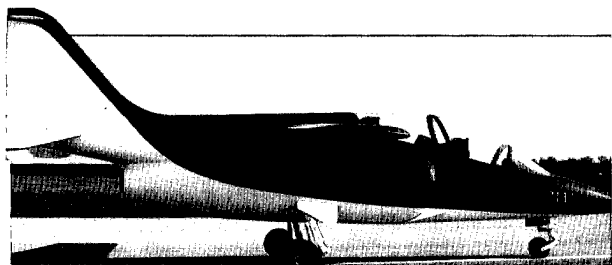
Ground Force Equipment

[redacted] is [redacted]
[redacted] The first of two prototypes is scheduled for completion this year. These howitzers will be entirely Argentine, using steel from a domestic steel mill and barrels from the government's Rio Tercero Military Factory. The ability to produce the gun barrels represents a new advance for Argentina, resulting from the purchase of specialized West German machinery in 1981. Ammunition for the gun is to be produced in Argentina under license from a Belgian firm. [redacted]

CITEFA also is testing variants of the Pampero rocket launcher system. A launcher with a projected range of 30 kilometers is under development.

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Figure 14
The IA-63 Pampa Jet Trainer
Prototype



Type	Single-engine basic and advanced trainer
Wings	Cantilever shoulder-wing monoplane
Power plant	One US-built Garret turbofan engine
Avionics	Standard avionics package. Wide range of options available to potential customers.
Maximum speed	740 km/hr
Maximum range	1,500 km

Note: The first prototype of the IA-63 was presented to the press in October 1984. The program is now facing delays resulting from budget cuts, and full-scale production is not expected to begin for at least two years.

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CITEFA has stated publicly, moreover, that an air-to-surface version of the Pampero has been successfully tested on the IA-58 Pucara aircraft.

Development of a new antitank missile, the MATVA, is under way at CITEFA. According to *Jane's Weapons Systems*, the MATVA appears to be based on the Milan missile, produced by Euromissile, a West European conglomerate. The Milan performed successfully for Argentina in the 1982 Falklands conflict.

Naval Systems

Argentina is developing a third version of the Kingfisher air-to-surface missile, possibly to be called the ASM-3. It is a helicopter-launched model with a 100-kilogram warhead. A prototype is scheduled for testing in 1985.

Aircraft

FMA officials have stated in industry journals that Argentina hopes to build on its experience with the IA-63 to produce a jet fighter by the early 1990s, using technology from West Germany. Although the

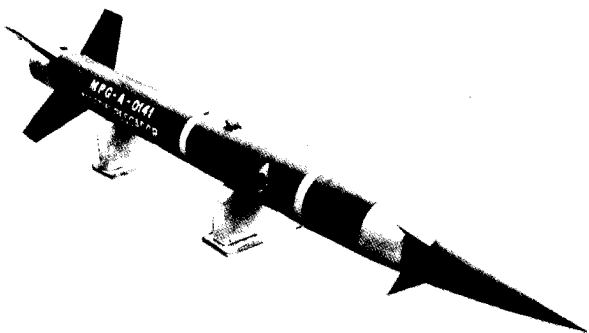


Figure 15. The Kingfisher Antiship Missile. The Martin Pescador, or Kingfisher, is a short-range supersonic air-to-surface missile intended for either air-to-ground or antiship missions.

program has a high priority, we believe that this aircraft is unlikely to appear before the mid-to-late 1990s in view of the delays in the IA-63 program and the likelihood of continuing budgetary problems.

In 1983, FMA announced plans for the development of a twin turboprop light transport, designated the ATL. According to trade journals, FMA officials believe that the ATL would be an attractive replacement for older aircraft now on the market. It would have both civil and military applications, and FMA would offer special configurations to fit customer needs. FMA is seeking a partner to share production costs and has approached several firms in West Germany,

Advanced Weapons Programs

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[REDACTED]

and a range of over 500 nautical miles. The consortium will construct a prototype vehicle, license it to the Argentines, and possibly help build a production facility. [REDACTED]

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Although we believe Argentina has amassed a significant amount of technology and data through its rocket research and the Condor program, it would be quite expensive for the Argentines to complete the development phase, and costlier still to manufacture the actual weapon systems. Existing and potential embargoes by Western nations of critical technologies—guidance and control systems, propellants, and manufacturing processes—also pose a major obstacle. Even if there are no additional technology embargoes and no further budget cuts, we believe the Argentines are years away from successfully developing and deploying an operational ballistic missile system.

[REDACTED]

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Ballistic Missile

Drawing on technology it developed in the 1970s and early 1980s in working with sounding rockets, Argentina has embarked on a ballistic missile development program in recent years. Air Force journals indicate that research is being carried out by the Air Force's aeronautic and research institute, IIAE, under the project name "Condor." [REDACTED]

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As part of this program, Argentina signed an agreement in 1983 with a consortium led by Messerschmitt-Boelkow-Blohm, a West German firm, for the development of a multistaged launch vehicle for the armed forces. [REDACTED] the two-stage vehicle is to have thrust vector control, midterm inertial guidance, a payload of more than 200 pounds,

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